

CLAIMS

What is claimed is:

- 40 1. A method for managing information to be accessed by multiple
5 consumers, said information comprising one or more information records, said
information records to be accessed by said multiple consumers in a specified order,
each said information record comprising data to be accessed by a consumer, said
method comprising:
- 10 providing said data of an information record to a consumer; and
updating a history table, said history table comprising one or more history
records, each said history record comprising a message state field, said updating
comprising setting said message state field in a history record corresponding to said
consumer to indicate said consumer accessed said data.
- 15 2. The method for managing information of claim 1, in which each said
information record further comprises a message identifier value that identifies the data
of said information record and each said history record further comprises a message id
field that identifies data in an information record.
- 20 3. The method for managing information of claim 2, in which each said
history record further comprises a consumer id field that identifies a consumer of said
multiple consumers that is to access data in an information record, said data identified

by said message id field in said history record, said consumer id field of said history record identifying said history record as corresponding to said consumer.

4. The method for managing information of claim 3, in which said updating comprises setting said message state field in the history record with a message id field that identifies said data that said consumer is provided access to and with a consumer id field that identifies said consumer.

5. The method for managing information of claim 1, in which said history table comprises a history record for each consumer, for each information record comprising data to be provided to each said consumer, and in which prefix index key compression is used to store only one instance of a message identifier value that identifies the data of an information record in said history table for each history record for said information record.

6. The method for managing information of claim 1, further comprising storing data to be accessed by a consumer in an information record; creating a history record for each consumer that is to access said data; and setting said message state field in each said history record to indicate said data has not been accessed.

7. The method for managing information of claim 1, further comprising a read-order table, said read-order table comprising order data that indicates the relative

order that data in said information records is to be accessed by said multiple consumers, said method further comprising identifying the data of an information record that a consumer is to be provided access to by said order data in said read-order table.

5 8. The method for managing information of claim 1, further comprising:
reading one or more history records of said history table, said one or more
history records comprising a history table read; and
deleting an information record if all the message state fields in all of the history
records of said history table read indicate that said data in said information record has
been accessed.

10 9. The method for managing information of claim 1, further comprising a
work list table, said work list table comprising one or more work entries, each said work
entry comprising an identification of data in an information record.

15 10. The method for managing information of claim 9, further comprising
adding a work entry to said work list table, said work entry comprising an identification
of said data said consumer is provided access to.

20 11. The method for managing information of claim 9, further comprising:
accessing a work entry in said work list table;

reading one or more history records of said history table, said one or more history records comprising a history table read, said one or more history records comprising said history table read determined by said work entry; and

deleting an information record if all the message state fields in all of the history records of said history table read indicate that said data in said information record has been accessed.

12. The method for managing information of claim 9, further comprising: batching two or more work entries in said work list table; and performing in a single transaction

reading one or more history records of said history table, said one or more history records determined by said two or more work entries, and deleting one or more information records.

13. A system for the delivery of information to multiple consumers, said system comprising:

an information queue comprising one or more information queue records, each said information queue record comprising information to be accessed by one or more consumers;

a table comprising one or more table records, each said table record comprising an information identification field comprising an identification of said information in an information queue record, each said table record further comprising a consumer identification field comprising an identification of one of said one or more consumers.

14. The system for the delivery of information to multiple consumers of claim 13, in which each said information queue record further comprises said identification of said information of said information queue record.

5

15. The system for the delivery of information to multiple consumers of claim 13, in which each said table record further comprises a message state field that indicates if the information in said information queue identified in the corresponding information identification field of said table record has been delivered to the consumer identified in the consumer identification field of said table record.

10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260
265
270
275
280
285
290
295
300
305
310
315
320
325
330
335
340
345
350
355
360
365
370
375
380
385
390
395
400
405
410
415
420
425
430
435
440
445
450
455
460
465
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
545
550
555
560
565
570
575
580
585
590
595
600
605
610
615
620
625
630
635
640
645
650
655
660
665
670
675
680
685
690
695
700
705
710
715
720
725
730
735
740
745
750
755
760
765
770
775
780
785
790
795
800
805
810
815
820
825
830
835
840
845
850
855
860
865
870
875
880
885
890
895
900
905
910
915
920
925
930
935
940
945
950
955
960
965
970
975
980
985
990
995

16. The system for the delivery of information to multiple consumers of claim 13, further comprising a read-order table, said read-order table comprising order data indicating the order that information in said information queue is to be delivered to a consumer.

17. The system for the delivery of information to multiple consumers of claim 16, in which said read-order table comprises one or more records, each said record of said read-order table comprising an identification field that identifies information in an information queue record, each said record of said read-order table further comprising an enqueue time field that comprises said order data.

18. The system for the delivery of information to multiple consumers of claim 13, further comprising a work list table, said work list table comprising one or more work list entries, each said work list entry comprising an identification of information in an information queue record.

5

19. The system for the delivery of information to multiple consumers of claim 18, in which each said work list entry is a record.

20. The system for the delivery of information to multiple consumers of claim 18, in which said work list table comprises one or more work records and each said work list entry is a field in a work record.

21. A system for the delivery of messages to multiple consumers, said system comprising:

a message queue comprising one or more message queue records, each said one or more message queue records comprising a message and a message identification;

a history table comprising one or more history records, each of said one or more history records comprising a message identification, a consumer identification and a message state identification; and

a work list table comprising one or more work list entries, each said work list entry comprising a message identification.

SWY
A2

22. The system for the delivery of messages to multiple consumers of claim 21, further comprising a read-order table comprising one or more read-order records, each said read-order record comprising a message identification and order data, said order data indicating the relative order that the message of said message queue that is identified by the message identification of said read-order record is to be delivered to a consumer.

10
23. A method for multiple consumers to access information in a non first-in first-out, prescribed order, said information comprising one or more pieces of information, a first piece of information stored in a first location, said method comprising:
providing access to said first piece of information to a first consumer of said multiple consumers;
indicating in a second location that said first consumer has accessed said first piece of information;
15 providing access to said first piece of information to a second consumer of said multiple consumers; and
indicating in a third location that said second consumer has accessed said first piece of information.

20 24. The method for multiple consumers to access information of claim 23, in which said first location comprises an information entry in a queue of information.

25. The method for multiple consumers to access information of claim 24, in which said queue of information comprises one or more information entries, and each said information entry comprises a piece of information to be accessed by one or more of said multiple consumers, each said information entry further comprising an
5 identification of said piece of information in said information entry.

26. The method for multiple consumers to access information of claim 25, further comprising deleting said entry comprising said first piece of information that said first consumer and said second consumer is provided access to from said queue of information after said first consumer and said second consumer have accessed said first piece of information.

add
P3
Add
B17

10
20
30
40
50
60
70
80
90
100